Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period:\_\_\_\_\_\_

**Written responses for Genetics Questions**

*Example question: Explain how it is possible for two purple pea plants to have white pea plant offspring?*

*Example answers:*

Poor: *Both pea plants are purple and have all types of offspring*

“Getting there”: *Both pea plants carry a white allele.*

Good: *If both of the purple pea plants are heterozygous (Pp), then there is a 25% of them both passing on their recessive allele (p) thus creating a white offspring (pp).*

Directions: Rate the answer as “poor,” “getting there,” or “good.” Explain your reasoning. If the answer is less than “good.” This first one includes a “good” answer. The second two have answers that need to be improved.

1. Mr. Krabbs is homozygous dominant for his tall eyes and Mrs. Krabbs is heterozygous for her tall eyes. The hospital has given them a short-eyed baby. Was a mistake made? Explain why or why not. (Note: Mr. Krabbs is the father! Mrs. Krabbs is a faithful spouse.)

|  |  |
| --- | --- |
| Answer | Rating with explanation for rating (Ex. Why a poor response?) |
| The hospital made a mistake. |  |
| The hospital made a mistake, Mr. Krabbs is homozygous dominant. |  |
| The hospital made a mistake. Since Mr. Krabbs is homozygous dominant, then all his offspring will have at least one dominant allele and therefore will show the dominant trait, tall eyes, in their phenotype. |  |

1. Patrick is heterozygous for his pink body color and homozygous dominant for thick eyebrows. He wants to marry Patti who has orange skin and thin eyebrows. Before he marries Patti, he wants to make sure all their kids would be pink. Is this possible? Explain why or why not.

|  |  |
| --- | --- |
| Answer | Rating with explanation |
| Yes. |  |
| No, it is not possible because Patrick is heterozygous. |  |

Improved answer:

1. Sandy the squirrel is homozygous dominant for her bushy tail. She has kids with Bubba, who has a non-bushy tail. Bubba is upset that none of their kids have non-bushy tails and suspects that the kids might not be his. Explain why, in fact, these bushy tailed kids are Bubba’s.

|  |  |
| --- | --- |
| Answer | Rating with explanation |
| Non-bushy tails are recessive. |  |
| Sandy is homozygous dominant. |  |

Improved answer: